CLAIMS

WHAT IS CLAIMED IS:

1. A system for providing a GPS enabled antenna, comprising:

an antenna;

a switching module coupled to the antenna;

a global positioning system (GPS) module coupled to the switching module; and

an impedance matching circuit in the GPS module constructed to match impedance at approximately a GPS signal frequency,

wherein the switching module is adapted to selectively couple the antenna to the GPS module.

2. The system according to claim 1, further comprising:

a diplexer coupled between the antenna and the switching module,

wherein the antenna is constructed as a dual-band antenna.

3. The system according to claim 2, wherein the diplexer is adapted to couple first band signals to a first band duplexer and second band signals to a second band duplexer.

4. The system according to claim 3, wherein the second band signals are cellular band signals.

5. The system according to claim 3, wherein the second band signals are band signals at approximately 800 MHz.

6. The system according to claim 3, wherein the first band signals are personal communications service (PCS) band signals.

7. The system according to claim 3, wherein the first band signals are band signals at approximately 1900 MHz.

8. The system according to claim 1, wherein the GPS module includes a GPS low noise amplifier.

9. The system according to claim 1, wherein the impedance matching circuit is adapted to provide tuning for the GPS band.

10. The system according to claim 1, wherein the GPS module includes the impedance matching circuit and a GPS low noise amplifier, the impedance matching circuit being coupled to the switching module, and the GPS low noise amplifier being coupled to the impedance matching circuit.

11. The system according to claim 1, wherein the switching module includes a two-way switch.

12. The system according to claim 11, further comprising:

communications band circuitry coupled to a first port of the two-way switch,

wherein the GPS module is coupled to the second port of the two-way switch.

13. The system according to claim 1, wherein the switching module includes a three-way switch.

14. The system according to claim 13, further comprising:

cellular band circuitry coupled to a first port of the three-way switch; and

PCS band circuitry coupled to a second port of the three-way switch,

wherein the GPS module is coupled to a third port of the three-way switch.

15. A wireless communications device, comprising:

an antenna;

a diplexer coupled to the antenna;

a switching module coupled to the diplexer;

a global positioning system (GPS) module coupled to the switching module; and

a personal communications service (PCS) band duplexer coupled to the switching

module,

wherein the switching module is adapted to switch GPS band signals to the GPS module and PCS band signals to the PCS band duplexer.

16. The device according to claim 15, further comprising:

a cellular band duplexer coupled to the diplexer.

17. The device according to claim 16, wherein the diplexer is adapted to couple cellular band signals to the cellular band duplexer.

18. The device according to claim 15, wherein the diplexer is adapted to couple PCS band signals to the switching module.

19. The device according to claim 15, wherein the diplexer is adapted to couple GPS band signals to the switching module with attenuation.

20. The device according to claim 19, wherein the attenuation is approximately -0.3 dB.

21. The device according to claim 15, wherein the GPS module includes an impedance matching module, the impedance matching module being coupled to the switching module.

22. The device according to claim 21, wherein the impedance matching module is adapted to provide tuning at approximately the GPS band.

23. The device according to claim 22, wherein the GPS module further includes a GPS low noise amplifier, the GPS low noise amplifier being coupled to the impedance matching module.

24. The device according to claim 15, wherein the diplexer includes a high pass frequency response with a cutoff frequency at approximately 1600 MHz.

25. The device according to claim 15, wherein the diplexer includes a high pass frequency response with a cutoff frequency at approximately 1400 MHz.

26. The device according to claim 25, wherein the diplexer provides GPS band signals to the switching module with less attenuation than if the diplexer included the high pass frequency response with the cutoff frequency at approximately 1600 MHz.

27. The device according to claim 15, wherein the diplexer includes a high pass frequency response with a cutoff frequency designed to reduce attenuation of the GPS band signals.

28. The device according to claim 15, wherein the diplexer includes a frequency response designed to reduce attenuation of the GPS band signals.

29. A method for providing a global positioning system (GPS) enabled antenna, comprising the steps of:

(a) providing an antenna tuned to receive a wireless communications signal in a communications band;

(b) receiving at the antenna a wireless communications signal;

(c) receiving at the same antenna a GPS signal;

(d) propagating a combined signal to a switching module, the combined signal including the GPS signal and the wireless communications signal;

(e) switching, via the switching module, the combined signal to a GPS module; and

(f) extracting the GPS signal from the combined signal using the GPS module.

30. The method according to claim 29, wherein the extracting step further includes matching an impedance at approximately the frequency of the GPS signal.

31. The method according to claim 29, wherein the step (b) includes the step of lowering a cutoff frequency of a high pass frequency response in the diplexer to reduce attenuation of the GPS signal.

32. A method for providing a global positioning system (GPS) enabled antenna,

comprising the steps of:

(a) receiving a wireless communications signal from at least one communications band;

(b) coupling, via a triplexer, GPS band signals of the wireless communications signal to a GPS module;

(c) coupling, via the triplexer, first band signals of the wireless communications signal to the first band duplexer; and

(d) coupling, via the triplexer, second band signals of the wireless communications signal to the second band duplexer.

33. The method according to claim 32, wherein the step (c) includes the step of coupling, via the triplexer, personal communications service (PCS) band signals of the wireless communications signal to the PCS band duplexer.

34. The method according to claim 32, wherein the step (d) includes the step of coupling, via the triplexer, cellular band signals of the wireless communications signal to the cellular band duplexer

35. A method for receiving incoming signals from at least one of three signal bands on a single antenna of a wireless handheld communications device, comprising the steps of:

separating, via a diplexer, first band signals from the incoming signals and coupling

the filtered first band signals to a first band duplexer;

separating, via the diplexer, at least one of second band signals and third band signals from the incoming signals and coupling the at least one of the second band signals and the third band signals to a switching module; and

at least one of (a) coupling the second band signals to a second band duplexer and (b) coupling the third band signals to a third band module.